

2012-2013 Influenza Season Week 46 ending November 17, 2012

All data are preliminary and may change as more reports are received.

Synopsis: During week 46 (November 11-17, 2012), influenza activity increased in the U.S.

- **Viral Surveillance:** Of 3,742 specimens tested and reported by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories during week 46, 494 (13.2%) were positive for influenza.
- **Pneumonia and Influenza Mortality:** The proportion of deaths attributed to pneumonia and influenza (P&I) was below the epidemic threshold.
- **Influenza-associated Pediatric Deaths:** One influenza-associated pediatric death was reported and was associated with an influenza A (H3) virus.
- **Outpatient Illness Surveillance:** The proportion of outpatient visits for influenza-like illness (ILI) was 1.6%, which is below the national baseline of 2.2%. All 10 regions reported ILI below region-specific baseline levels. One state experienced high ILI activity, two states experienced moderate ILI activity; 3 states experienced low ILI activity; New York City and 41 states experienced minimal ILI activity, and the District of Columbia and 3 states had insufficient data.
- **Geographic Spread of Influenza:** The geographic spread of influenza in 1 state was reported as widespread; 6 states reported regional activity; 8 states reported local activity; the District of Columbia, Guam, and 31 states reported sporadic activity; 3 states reported no influenza activity, and Puerto Rico, the U.S. Virgin Islands and 1 state did not report.

A description of surveillance methods is available at: <http://www.cdc.gov/flu/weekly/overview.htm>.

National and Regional Summary of Select Surveillance Components

HHS Surveillance Regions*	Data for current week			Data cumulative since September 30, 2012 (Week 40)				
	Out-patient ILI†	% positive for flu‡	Number of jurisdictions reporting regional or widespread activity§	2009 H1N1	A (H3)	A (Subtyping not performed)	B	Pediatric Deaths
Nation	Normal	13.2%	7 of 54	28	940	456	877	2
Region 1	Normal	3.3%	1 of 6	0	23	2	1	0
Region 2	Normal	5.3%	1 of 4	3	48	28	55	0
Region 3	Normal	1.8%	0 of 6	3	32	3	7	0
Region 4	Normal	14.1%	2 of 8	12	155	313	341	1
Region 5	Normal	12.3%	1 of 6	6	64	19	37	0
Region 6	Normal	8.8%	0 of 5	2	56	48	155	1
Region 7	Normal	14.2%	0 of 4	0	169	5	124	0
Region 8	Normal	11.8%	1 of 6	1	79	7	123	0
Region 9	Normal	4.9%	0 of 5	0	105	23	19	0
Region 10	Normal	15.0%	1 of 4	1	209	8	15	0

*HHS regions (Region 1 CT, ME, MA, NH, RI, VT; Region 2: NJ, NY, Puerto Rico, U.S. Virgin Islands; Region 3: DE, DC, MD, PA, VA, WV; Region 4: AL, FL, GA, KY, MS, NC, SC, TN; Region 5: IL, IN, MI, MN, OH, WI; Region 6: AR, LA, NM, OK, TX; Region 7: IA, KS, MO, NE; Region 8: CO, MT, ND, SD, UT, WY; Region 9: AZ, CA, Guam, HI, NV; and Region 10: AK, ID, OR, WA).

† Elevated means the % of visits for ILI is at or above the national or region-specific baseline.

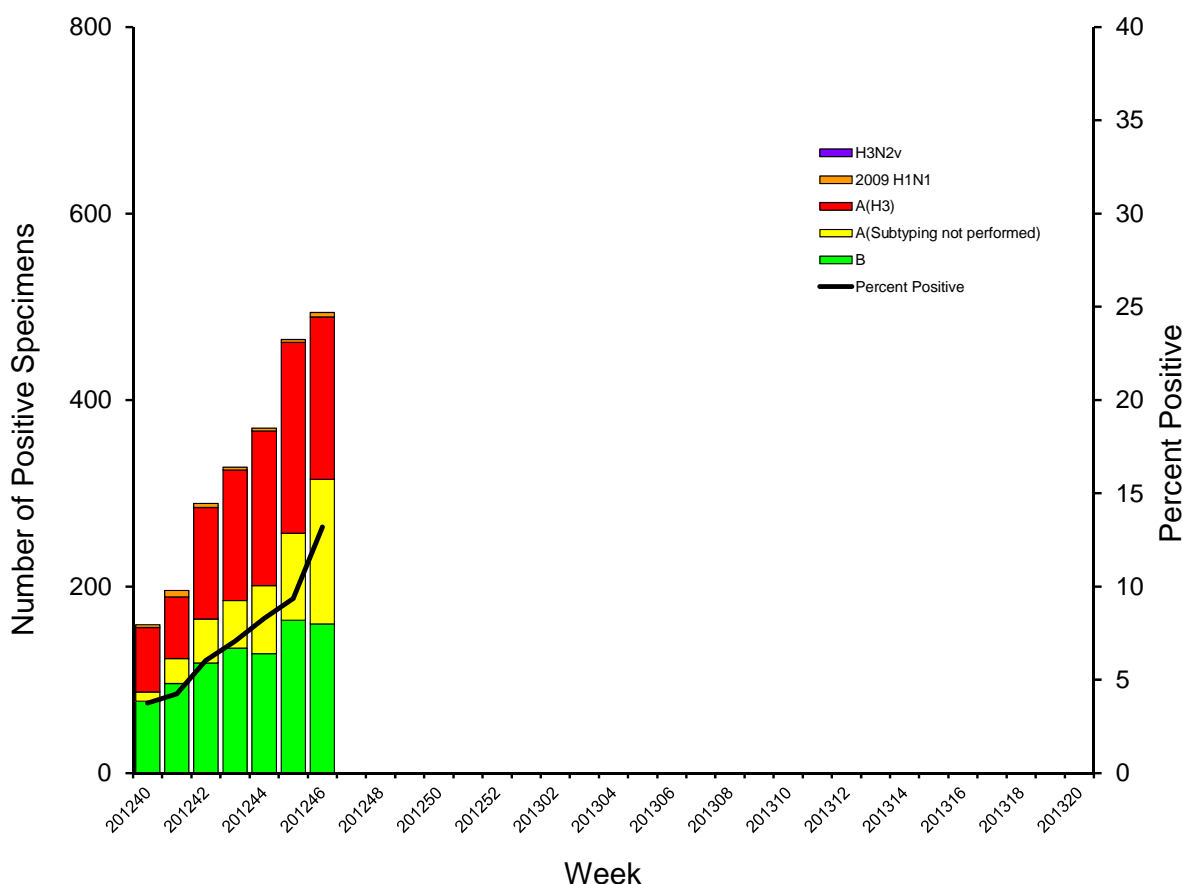
‡ National data are for current week; regional data are for the most recent three weeks.

§ Includes all 50 states, the District of Columbia, Guam, Puerto Rico, and the U.S. Virgin Islands.

U.S. Virologic Surveillance: WHO and NREVSS collaborating laboratories located in all 50 states and Puerto Rico report to CDC the number of respiratory specimens tested for influenza and the number positive by influenza virus type and influenza A virus subtype. The results of tests performed during the current week are summarized in the table below.

	Week 46
No. of specimens tested	3,742
No. of positive specimens (%)	494 (13.2%)
<i>Positive specimens by type/subtype</i>	
Influenza A	334 (67.6%)
2009 H1N1	5 (1.5%)
Subtyping not performed	155 (46.4%)
H3	174 (52.1%)
Influenza B	160 (32.4%)

Influenza Positive Tests Reported to CDC by U.S. WHO/NREVSS Collaborating Laboratories, National Summary, 2012-13 Season



Novel Influenza A Virus: No new novel influenza A virus infections were reported to CDC during week 46. A total of 310 infections with variant influenza viruses (306 H3N2v viruses, 3 H1N2v viruses, and 1 H1N1v virus) were reported from 10 states from July 2012 through September 28, 2012 with September 7 being the most recent date of illness onset in a confirmed case. The vast majority of cases occurred after exposure to swine, though instances of likely human-to-human transmission have been identified. No ongoing human-to-human transmission has been identified.

More information about the H3N2v outbreaks can be found at <http://www.cdc.gov/flu/swineflu/h3n2v-outbreak.htm>. Additional information on influenza in swine, variant influenza infection in humans, and precautionary measures recommended during interactions with swine can be found at <http://www.cdc.gov/flu/swineflu/index.htm>.

Antigenic Characterization: CDC has antigenically characterized 91 influenza viruses [2 2009 H1N1 viruses, 41 influenza A (H3N2) viruses, and 48 influenza B viruses collected by U.S. laboratories since October 1, 2012.

2009 H1N1 [2]

- Both 2009 H1N1 viruses tested were characterized as A/California/7/2009-like, the influenza A (H1N1) component of the 2012-2013 influenza vaccine for the Northern Hemisphere.

Influenza A (H3N2) [41]:

- All 41 H3N2 influenza viruses tested so far have been characterized as A/Victoria/361/2011-like, the H3N2 component of the 2012-2013 Northern Hemisphere influenza vaccine.

Influenza B (B/Victoria/02/87 and B/Yamagata/16/88 lineages) [48]:

- Yamagata Lineage [34]:** Thirty-four (70.8%) of the 48 influenza B viruses tested so far this season have been characterized as B/Wisconsin/1/2010-like, the influenza B component of the 2012-2013 Northern Hemisphere influenza vaccine.
- Victoria Lineage [14]:** Fourteen (29.2%) of 48 influenza B viruses tested have been from the B/Victoria lineage of viruses

Antiviral Resistance: Testing of 2009 influenza A (H1N1), influenza A (H3N2), and influenza B virus isolates for resistance to neuraminidase inhibitors (oseltamivir and zanamivir) is performed at CDC using a functional assay. Additional 2009 influenza A (H1N1) clinical samples are tested for a single mutation in the neuraminidase of the virus known to confer oseltamivir resistance (H275Y). The data summarized below combine the results of both testing methods. These samples are routinely obtained for surveillance purposes rather than for diagnostic testing of patients suspected to be infected with antiviral resistant virus.

High levels of resistance to the adamantanes (amantadine and rimantadine) persist among 2009 influenza A (H1N1) and A (H3N2) viruses (the adamantanes are not effective against influenza B viruses). As a result of the sustained high levels of resistance, data from adamantane resistance testing are not presented in the table below.

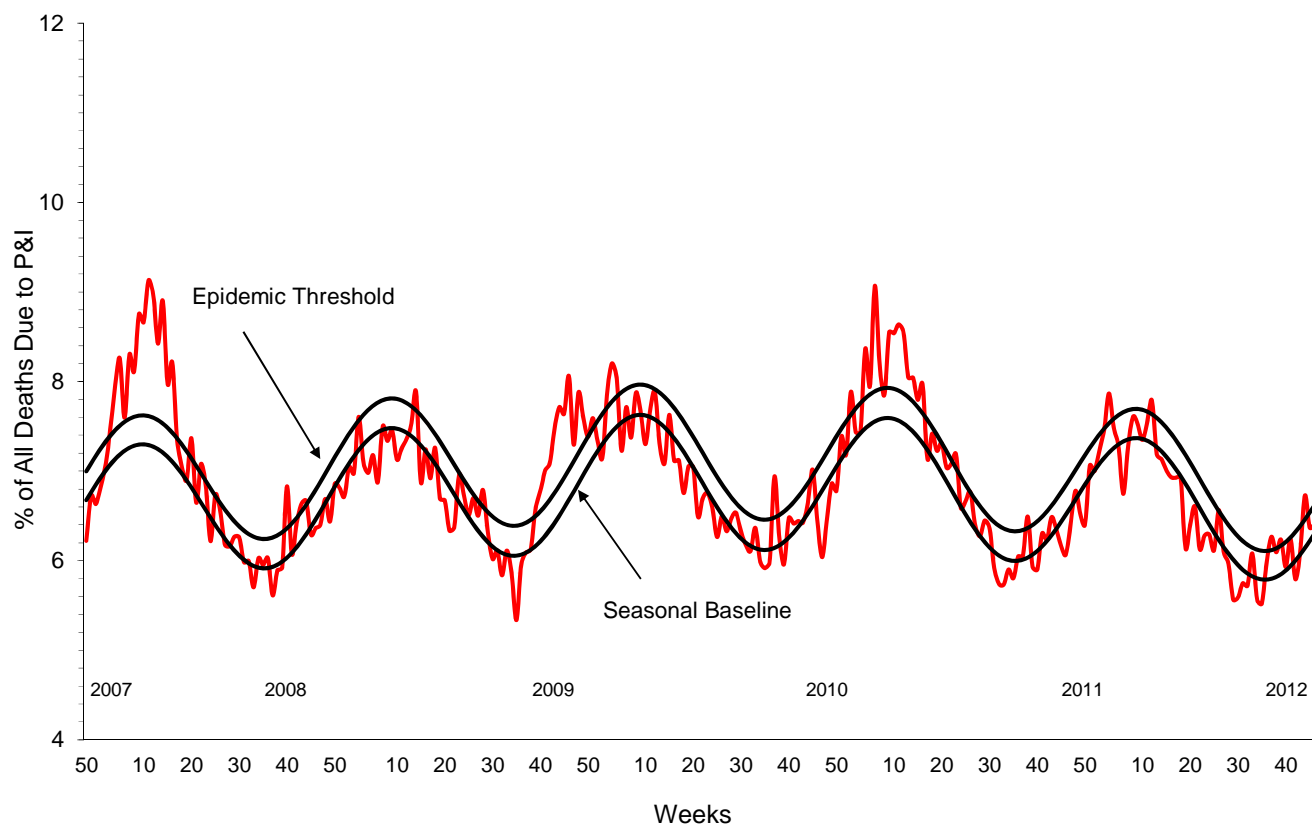
**Neuraminidase Inhibitor Resistance Testing Results
on Samples Collected Since October 1, 2012.**

	Oseltamivir		Zanamivir	
	Virus Samples tested (n)	Resistant Viruses, Number (%)	Virus Samples tested (n)	Resistant Viruses, Number (%)
Influenza A (H3N2)	43	0 (0.0)	43	0 (0.0)
Influenza B	37	0 (0.0)	37	0 (0.0)
2009 H1N1	1	0 (0.0)	1	0 (0.0)

The majority of currently circulating influenza viruses are susceptible to the neuraminidase inhibitor antiviral medications oseltamivir and zanamivir; however, rare sporadic cases of oseltamivir resistant 2009 influenza A (H1N1) and A (H3N2) viruses have been detected worldwide. Antiviral treatment with oseltamivir or zanamivir is recommended as early as possible for patients with confirmed or suspected influenza who have severe, complicated, or progressive illness; who require hospitalization; or who are at greater risk for serious influenza-related complications. Additional information on recommendations for treatment and chemoprophylaxis of influenza virus infection with antiviral agents is available at <http://www.cdc.gov/flu/antivirals/index.htm>.

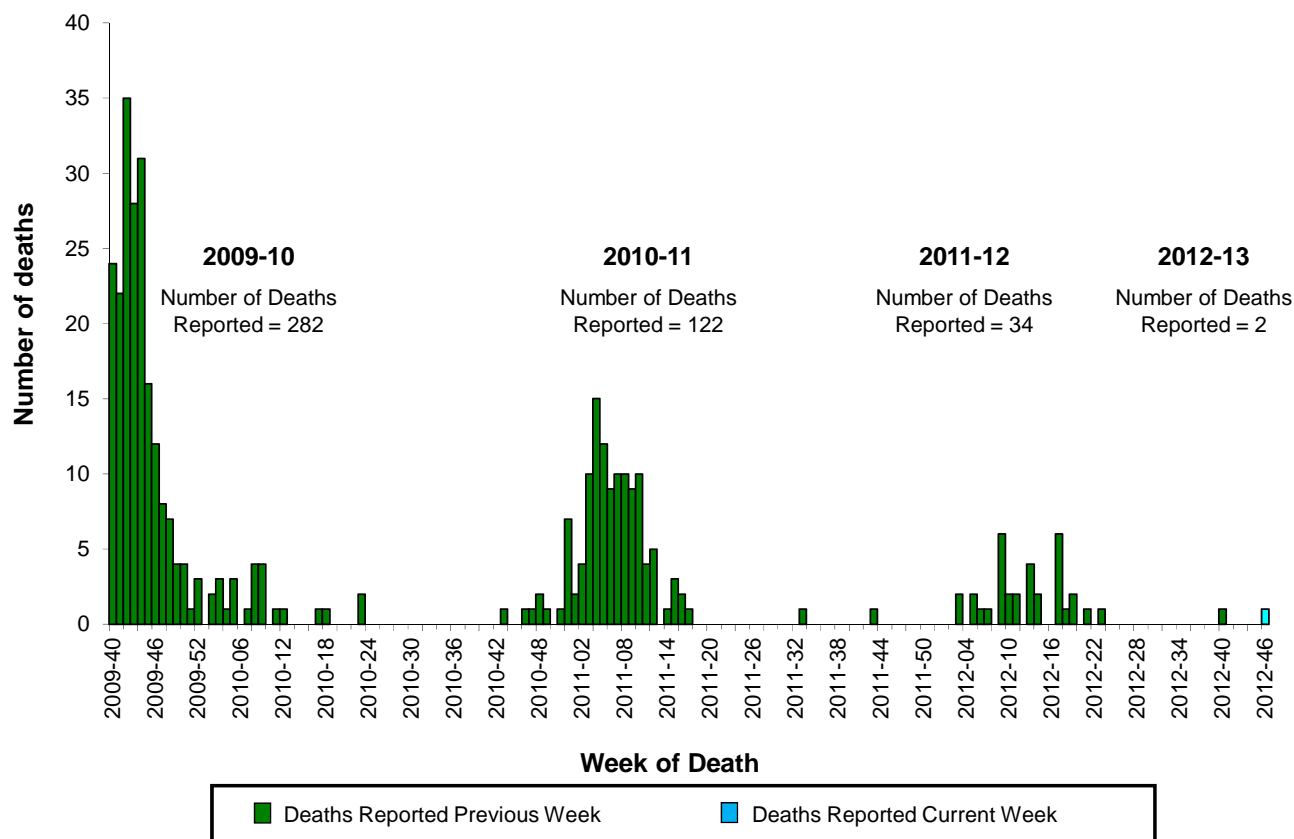
Pneumonia and Influenza (P&I) Mortality Surveillance: During week 46, 6.4% of all deaths reported through the 122 Cities Mortality Reporting System were due to P&I. This percentage was below the epidemic threshold of 6.6% for week 46.

Pneumonia and Influenza Mortality for 122 U.S. Cities Week ending November 17, 2012



Influenza-Associated Pediatric Mortality: One influenza-associated pediatric death was reported to CDC during week 46 and was associated with an influenza A (H3) virus. This death occurred during the week ending November 17 (week 46). This brings the total number of influenza-associated pediatric deaths reported during the 2012-2013 season to 2. Additional data can be found at: <http://gis.cdc.gov/GRASP/Fluview/PedFluDeath.html>

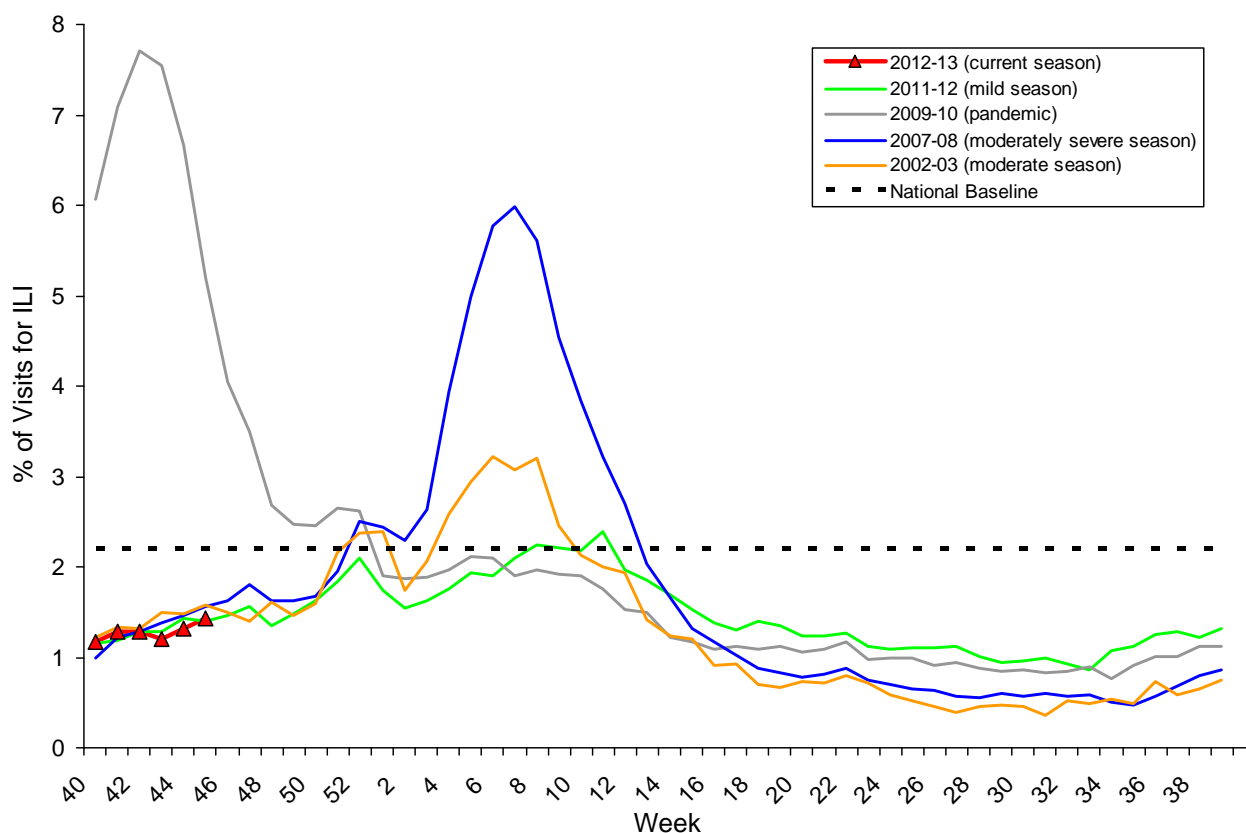
Number of Influenza-Associated Pediatric Deaths by Week of Death: 2009-10 season to present



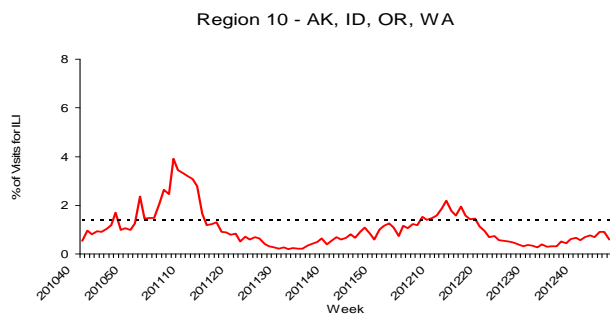
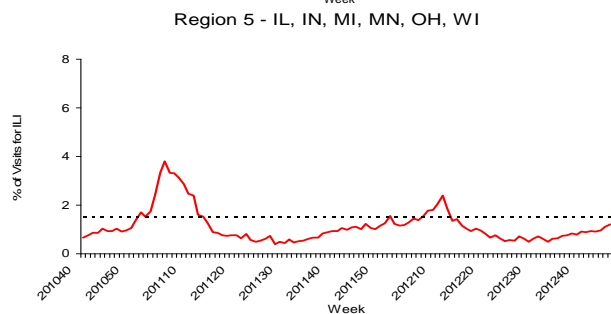
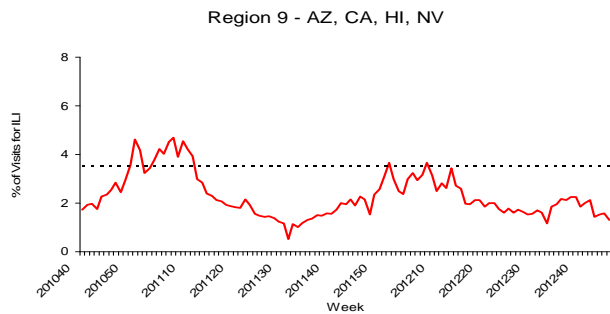
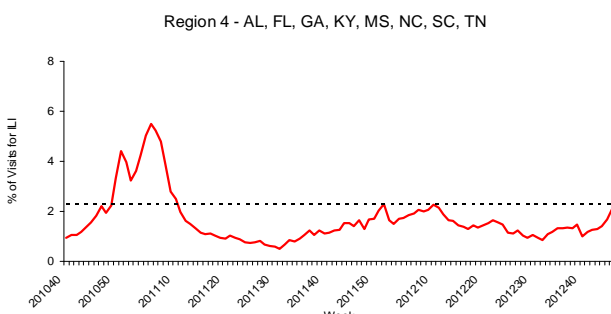
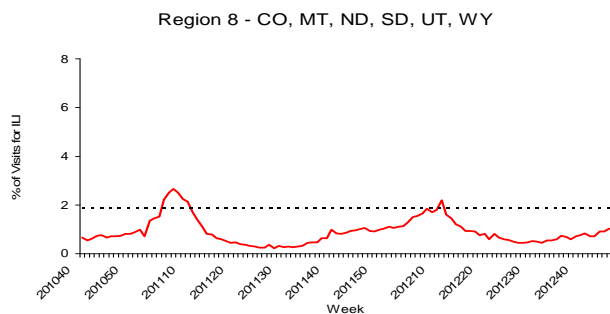
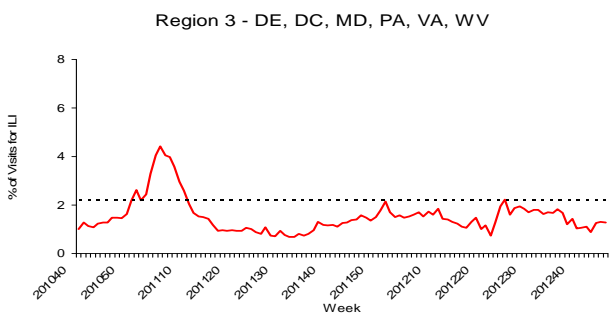
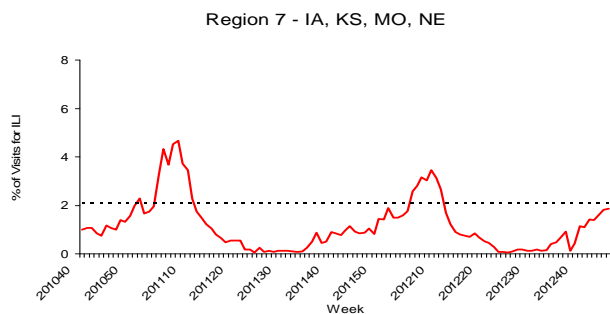
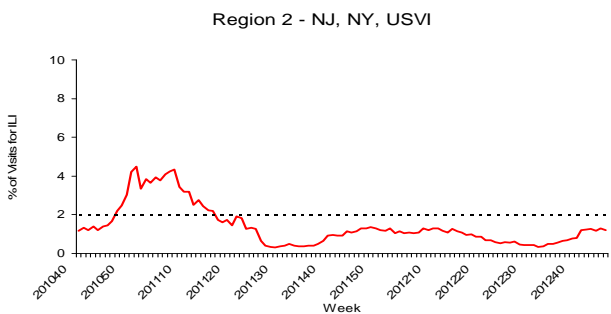
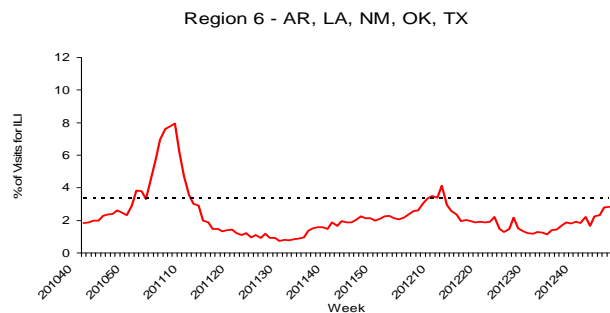
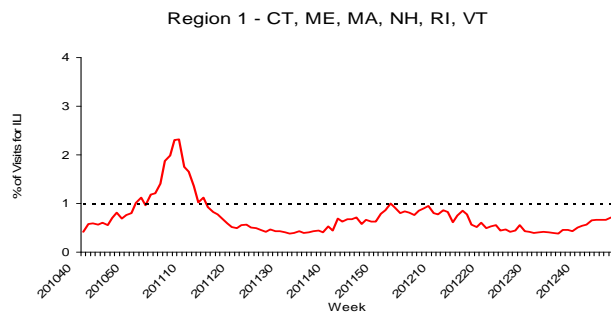
Influenza-Associated Hospitalizations: The Influenza Hospitalization Surveillance Network (FluSurv-NET) conducts all age population-based surveillance for laboratory-confirmed influenza-related hospitalizations in select counties in the Emerging Infections Program (EIP) states and Influenza Hospitalization Surveillance Project (IHSP) states. FluSurv-NET estimated hospitalization rates will be updated weekly starting later this season. Additional FluSurv-NET data can be found at: <http://gis.cdc.gov/GRASP/Fluview/FluHospRates.html>.

Outpatient Illness Surveillance: Nationwide during week 46, 1.6% of patient visits reported through the U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet) were due to influenza-like illness (ILI). This percentage is below the national baseline of 2.2%. (*ILI is defined as fever (temperature of 100°F [37.8°C] or greater) and cough and/or sore throat.*)

Percentage of Visits for Influenza-like Illness (ILI) Reported by the U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Weekly National Summary, 2012-13 and Selected Previous Seasons



On a regional level, the percentage of outpatient visits for ILI ranged from 0.6% to 2.8% during week 46. All 10 regions reported a proportion of outpatient visits for ILI below their region-specific baseline levels.



NOTE: Scales differ between regions

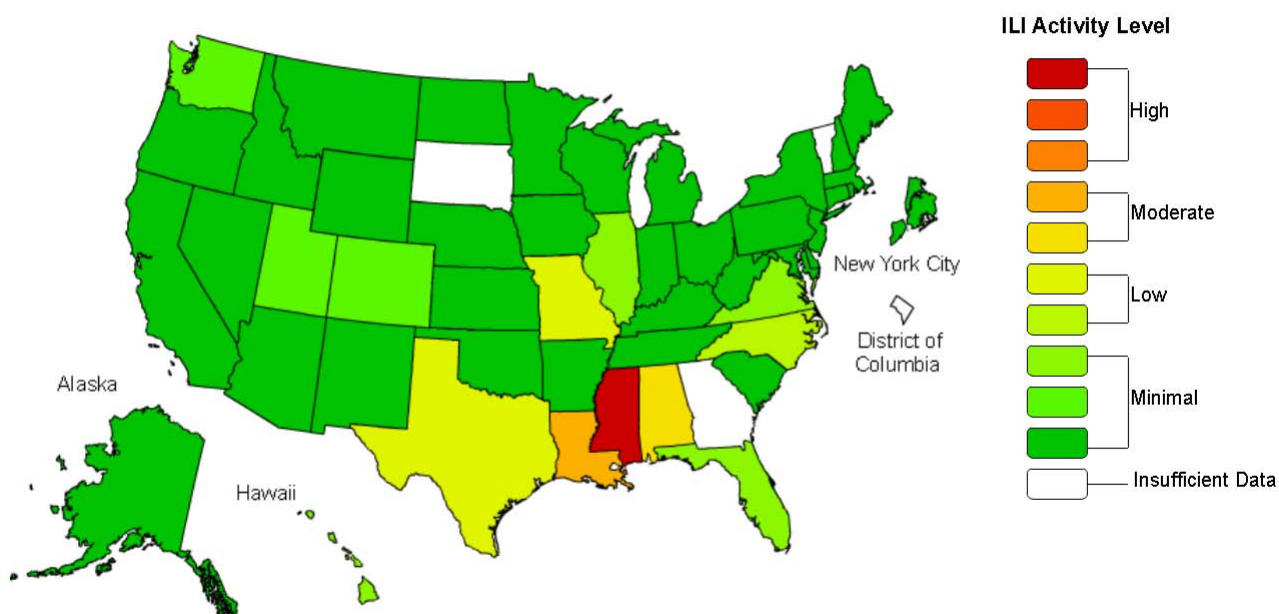
*Use of the regional baselines for state data is not appropriate.

ILINet Activity Indicator Map: Data collected in ILINet are used to produce a measure of ILI activity* by state. Activity levels are based on the percent of outpatient visits in a state due to ILI and are compared to the average percent of ILI visits that occur during spring and fall weeks with little or no influenza virus circulation. Activity levels range from minimal, which would correspond to ILI activity from outpatient clinics being below the average, to intense, which would correspond to ILI activity from outpatient clinics being much higher than average.

During week 46, the following ILI activity levels were experienced:

- One state experienced high ILI activity (Mississippi).
- Two states experienced moderate ILI activity (Alabama and Louisiana).
- Three states experienced low ILI activity (Missouri, North Carolina and Texas).
- New York City and 41 states experienced minimal ILI activity (Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Utah, Virginia, Washington, West Virginia, Wisconsin and Wyoming).
- Data were insufficient to calculate an ILI activity level from the District of Columbia and 3 states (Georgia, South Dakota and Vermont).

Influenza-Like Illness (ILI) Activity Level Indicator Determined by Data Reported to ILINet
2012-13 Influenza Season Week 46 ending Nov 17, 2012



*This map uses the proportion of outpatient visits to health care providers for influenza-like illness to measure the ILI activity level within a state. It does not, however, measure the extent of geographic spread of flu within a state. Therefore, outbreaks occurring in a single city could cause the state to display high activity levels.

Data collected in ILINet may disproportionately represent certain populations within a state, and therefore, may not accurately depict the full picture of influenza activity for the whole state.

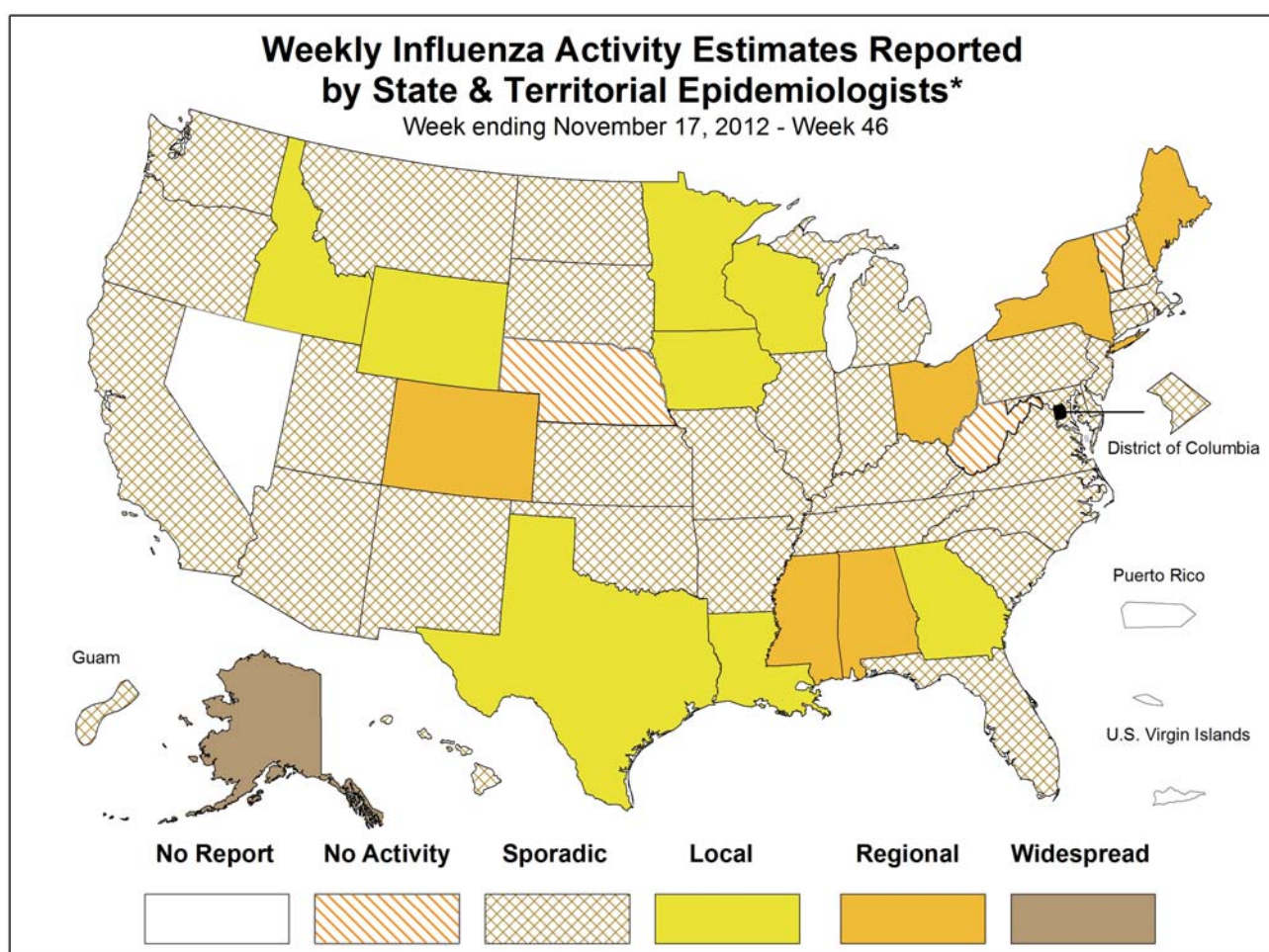
Data displayed in this map are based on data collected in ILINet, whereas the State and Territorial flu activity map is based on reports from state and territorial epidemiologists. The data presented in this map is preliminary and may change as more data is received.

Differences in the data presented here by CDC and independently by some state health departments likely represent differing levels of data completeness with data presented by the state likely being the more complete.

Geographic Spread of Influenza as Assessed by State and Territorial Epidemiologists: The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses, but does not measure the severity of influenza activity.

During week 46, the following influenza activity was reported:

- Widespread influenza activity was reported by 1 state (Alaska).
- Regional influenza activity was reported by 6 states (Alabama, Colorado, Maine, Mississippi, New York and Ohio).
- Local influenza activity was reported by 8 states (Georgia, Idaho, Iowa, Louisiana, Minnesota, Texas, Wisconsin and Wyoming).
- Sporadic influenza activity was reported by the District of Columbia, Guam, and 31 states (Arizona, Arkansas, California, Connecticut, Delaware, Florida, Hawaii, Illinois, Indiana, Kansas, Kentucky, Maryland, Massachusetts, Michigan, Missouri, Montana, New Hampshire, New Jersey, New Mexico, North Carolina, North Dakota, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Utah, Virginia and Washington).
- No influenza activity was reported by 3 states (Nebraska, Vermont and West Virginia).
- Puerto Rico, the U.S. Virgin Islands, and 1 state (Nevada) did not report.



* This map indicates geographic spread & does not measure the severity of influenza activity

Additional National and International Influenza Surveillance Information

FluView Interactive: This season, FluView includes enhanced web-based interactive applications that can provide dynamic visuals of the influenza data collected and analyzed by CDC. These FluView Interactive applications allow people to create customized, visual interpretations of influenza data, as well as comparisons across flu seasons, regions, age groups and a variety of other demographics. To access these tools visit www.cdc.gov/flu/weekly/fluviewinteractive.htm.

U.S. State and local influenza surveillance: Click on a jurisdiction below to access the latest local influenza information.

Alabama	Alaska	Arizona	Arkansas	California
Colorado	Connecticut	Delaware	District of Columbia	Florida
Georgia	Hawaii	Idaho	Illinois	Indiana
Iowa	Kansas	Kentucky	Louisiana	Maine
Maryland	Massachusetts	Michigan	Minnesota	Mississippi
Missouri	Montana	Nebraska	Nevada	New Hampshire
New Jersey	New Mexico	New York	North Carolina	North Dakota
Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island
South Carolina	South Dakota	Tennessee	Texas	Utah
Vermont	Virginia	Washington	West Virginia	Wisconsin
Wyoming	New York City	Virgin Islands		

Google Flu Trends: Google Flu Trends uses aggregated Google search data in a model created in collaboration with CDC to estimate influenza activity in the United States. For more information and activity estimates from the U.S. and worldwide, see <http://www.google.org/flutrends/>.

World Health Organization: Additional influenza surveillance information from participating WHO member nations is available through [FluNet](#) and the [Global Epidemiology Reports](#).

WHO Collaborating Centers for Influenza located in [Australia](#), [China](#), [Japan](#), and the [United Kingdom](#).

Europe: WHO/Europe at <http://www.euroflu.org/index.php> and the European Centre for Disease Prevention and Control at http://ecdc.europa.eu/en/publications/surveillance_reports/influenza/Pages/weekly_influenza_surveillance_overview.aspx.

Public Health Agency of Canada: The most up-to-date influenza information from Canada is available at <http://www.phac-aspc.gc.ca/fluwatch/>.

Health Protection Agency (United Kingdom): The most up-to-date influenza information from the United Kingdom is available at <http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/SeasonalInfluenza/>

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